

Annual Report

Atikokan Drinking Water System



2025

Prepared by **Northern Waterworks** on behalf
of the **Town of Atikokan**



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1 Introduction

1.1 Annual Reporting Requirements

This consolidated Annual Report (the Report) has been prepared in accordance with both section 11 (Annual Reports) and Schedule 22 (Summary Reports for Municipalities) of Ontario Regulation 170/03 (Drinking Water Systems Regulation). This Report is intended to inform both the public and Municipal Council about the operation of the system over the previous calendar year (January 1 to December 31, 2025).

Section 11 of O. Reg. 170/03 requires the development and distribution to the public of an annual report summarizing water quality monitoring results, adverse water quality incidents, system expenses, and chemicals used in the water treatment process.

Schedule 22 of O. Reg. 170/03 requires the development and distribution to Council of an annual report summarizing incidents of regulatory non-compliance and associated corrective actions, in addition to providing flow monitoring results for the purpose of enabling the Owner to assess the capability of the system to meet existing and planned demand.

1.2 Report Availability

In accordance with section 11 of O. Reg. 170/03, this Report must be given, without charge, to every person who requests a copy. Effective steps must also be taken to advise users of water from the system that copies of the report are available, without charge, and of how a copy may be obtained. This Annual Report shall be made available for inspection by the public on the Town of Atikokan's website and the [Northern Waterworks website](#).

In accordance with Schedule 22 of O. Reg. 170/03, this Annual Report must be given to the members of Municipal Council. Section 19 (Standard of care, municipal drinking-water system) of Ontario's *Safe Drinking Water Act* (SDWA) also places certain responsibilities upon those municipal officials who oversee an accredited operating authority or exercise decision-making authority over a system. The examination of this Report is one of the methods by which municipal officials may fulfil the obligations required by section 19 of the SDWA.

System users and members of Council should contact a representative of NWI for assistance in interpreting this Report. Questions and comments may be directed to the local NWI Operations Manager or by email to compliance@nwi.ca.

2 System Overview & Expenses

2.1 System Description

The Atikokan Drinking Water System must meet extensive treatment and testing requirements to ensure that human health is protected. The operation and maintenance of the system is governed by Ontario's *Safe Drinking Water Act* and the regulations therein, in addition to requirements within system-specific environmental approvals. Important system information is summarized in Table 1.

| Table 1: System information | |
|-----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Drinking-Water System (DWS) Name: | Atikokan Drinking Water System |
| DWS Number: | 220000950 |
| DWS Owner: | The Corporation of the Town of Atikokan |
| DWS Operating Authority: | Northern Waterworks Inc. |
| DWS Category: | Large Municipal Residential |
| DWS Components: | <ul style="list-style-type: none"> • Raw water pumping station • Atikokan Water Treatment Plant • Atikokan Water distribution system |
| Treatment Processes: | <ul style="list-style-type: none"> • Coagulation, sand-ballasted flocculation, and clarification • Dual media (rapid sand) filtration • Free chlorine disinfection • pH adjustment |

Water production begins as pumps at the raw water pumping station transfer source water from the Atikokan River and through a transmission line to the two proprietary Actiflo treatment units located at the Atikokan Water Treatment Plant, each of which includes a coagulation basin, injection basin, maturation basin and settling zone. Polyaluminum chloride (coagulant) is injected into the raw water immediately upstream from the coagulation basin, and water and coagulant are rapidly mixed in the basin before flow is directed to the injection basin.

In the injection basin, microsand and polymer solution (flocculant) are added to facilitate the formation of robust flocs. Floc formation continues in the maturation basin before water is

directed to the settling zone, where its velocity is reduced to allow for the separation and settling of floc. Supernatant then overflows into a launder and is directed to the filter units.

Impurities that were not captured and settled in the clarifier are removed by passing water through four dual media filters composed of anthracite and silica sand. The filters are periodically cleaned by reversing the flow of water through the filter using pumps. Chlorine gas (disinfectant), sodium carbonate solution (pH/alkalinity adjustment) and hydrofluorosilicic acid (fluoridation) are added to the filtrate as it is directed from the filters to the treated water storage reservoir.

Primary disinfection is achieved as disinfectant mixes with the filtrate in the reservoir. Treated water is then delivered from the reservoir to the water distribution system using pumps. Secondary disinfection requirements in the water distribution system are achieved by maintaining a free chlorine residual at all locations.

2.2 Water Treatment Chemicals

In accordance with section 11 of O. Reg. 170/03, this Report must include a list of all water treatment chemicals used by the system during the period covered by the report (summarized in Table 2). All chemicals used in the treatment process are NSF/ANSI 60 certified for use in potable water, as required by system approvals.

| Treatment Chemical | Application |
|----------------------------------|--------------------------|
| polyaluminum chloride (SternPAC) | coagulant |
| silica dioxide (Actisand) | flocculant |
| polymer (Superfloc C-492) | flocculant |
| sodium carbonate (soda ash) | pH/alkalinity adjustment |
| hydrofluorosilicic acid | fluoridation |
| chlorine gas | disinfectant |

2.3 System Expenses

In accordance with section 11 of O. Reg. 170/03, this Report must describe any major expenses incurred during the reporting period to install, repair or replace required equipment. This Report also summarizes those expenses related to strengthening equipment inventories and to maintenance activities undertaken by subcontracted service providers. Major expenses incurred in 2025 are summarized in Table 3.

| Category | Description | Expense |
|-----------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------|-------------|
| Maintenance | Bi-annual battery replacements ¹ | \$7,784 |
| Replace | UPS back up Plant PLC | \$10,919 |
| Replace | License software upgrade | \$7,772 |
| Replace | Chart recorder re wire and reconfiguration | \$3,680 |
| Maintenance | Actiflo unit 1 transfer pump rebuild and valve repairs | \$15,045 |
| Maintenance | Chlorine probe replacement and analyzer | \$16,116 |
| Replace | Fluoride dosing pump replacement | \$7,823 |
| Maintenance | High Lift pump 1 Inspection/repair | \$23,703 |
| Maintenance | Singer valve parts and install for high lift pump 2 | \$3,854 |
| Maintenance | Soda ash system valve replacement | \$1,515 |
| Maintenance | Flow meter calibration verifications (all sites) ¹ | \$7,977 |
| Maintenance | High Lift pump 2 commissioning | \$10,166 |
| Maintenance | Annual backflow testing | \$2,265 |
| Maintenance | Chlorine gas distribution repairs | \$4,703 |
| Maintenance | Annual hoist inspections (all sites) ¹ | \$1,388 |
| Maintenance | SCADA trouble shooting | \$15,882 |
| Maintenance | Fluoride room exhaust fan replacement | \$5,726 |
| Replace | High Lift pump room new exhaust fan exterior wall | \$3,091 |
| Replace | WTP electric heater replacements | \$21,057 |
| Replace | MSA workstation kit WTP/WPCP | \$10,394 |
| Maintenance | Alum tank piping repairs | \$9,240 |
| Replace | Scotty SCBA face masks fit test and flow testing | \$922 |
| Replace | O'Brien Watermain Replacement | \$3,497,191 |
| Maintenance | Hydrant renewals | \$43,250 |
| 1. All sites include the raw water pumping station, water treatment plant, wastewater treatment plant, and all sewage pumping stations. | | |

3 Water Quality

3.1 Overview

Water quality monitoring is conducted to determine and confirm that drinking water delivered to the consumer is safe and aesthetically pleasing. Monitoring is also required to assess compliance with legislation and to control the treatment process. In accordance with section 11 of O. Reg. 170/03, this Report must summarize the results of water quality tests required by regulations, approvals, and orders. The following sections summarize the results of all required water quality tests and compare the results to applicable water quality standards.

3.2 Microbiological Parameters

Microbiological sampling and testing requirements are provided in Schedule 10 (Microbiological sampling and testing) of O. Reg. 170/03. In 2025, a total of 291 routine source, treated and distribution water samples were collected for microbiological analysis by an accredited laboratory. Samples were collected on a weekly basis and included tests for E. coli (EC), total coliforms (TC), and heterotrophic plate counts (HPC). Results from microbiological analyses are summarized in Table 4. All results were below the associated Ontario Drinking Water Quality Standards.

| Sample Type | # of Samples | EC Results Range ¹ (MPN/100mL) | TC Results Range ¹ (MPN/100mL) | # of HPC Samples | HPC Results Range (CFU/mL) |
|---------------|--------------|-------------------------------------------|-------------------------------------------|------------------|----------------------------|
| Raw Water | 56 | 0 to 38 | 3 to >2420 | --- | --- |
| Treated Water | 56 | absent | absent | 55 | 0 to 1 |
| Distribution | 179 | absent | absent | 71 | 0 to 2 |

1. The Ontario Drinking Water Quality Standard for E. Coli and Total Coliforms in a treated or distribution sample is 'not detectable'. The presence of either parameter in a treated or distribution sample is considered an exceedance.

3.3 Operational Parameters

In accordance with Schedule 7 (Operational checks) of O. Reg. 170/03, regulated operational parameters that must be monitored include raw water turbidity, filtrate turbidity, treated water fluoride residual, and the free chlorine residuals associated with primary and secondary disinfection. Table 5 summarizes water quality results for regulated and selected unregulated operational parameters. In accordance with Schedule 6 (Operational checks, sampling, and testing – general) of O. Reg. 170/03, certain operational parameters are continuously monitored. Zero (0) Adverse Water Quality Incidents (AWQI) pertaining to operational parameters occurred during the reporting period.

| Parameter (Sample Type) | Number of Samples | Units | Min. Result | Max. Result | Annual Avg. | Adverse Result ¹ |
|---------------------------------|-------------------|-------|-------------|-------------|-------------|-----------------------------|
| Turbidity (Raw Water) | 254 | NTU | 0.603 | 7.49 | 1.36 | n/a |
| Turbidity (Filter 1) | Continuous | NTU | 0.014 | 2.073 | 0.094 | >1.0 |
| Turbidity (Filter 2) | Continuous | NTU | 0.028 | 1.998 | 0.084 | >1.0 |
| Turbidity (Filter 3) | Continuous | NTU | 0.053 | 1.998 | 0.096 | >1.0 |
| Turbidity (Filter 4) | Continuous | NTU | 0.019 | 2.073 | 0.068 | >1.0 |
| Turbidity (Treated) | 365 | NTU | 0.023 | 0.668 | 0.327 | n/a |
| pH (Treated) | 365 | --- | 6.32 | 8.57 | 7.26 | n/a |
| Aluminum Residual (Treated) | 48 | mg/L | 0.033 | 0.221 | 0.082 | n/a |
| Fluoride Residual (Treated) | Continuous | mg/L | 0.00 | 2.00 | 0.80 | |
| FCR ² (Treated) | Continuous | mg/L | 1.56 | 3.47 | 2.33 | n/a |
| FCR ³ (Distribution) | 450+ | mg/L | 0.35 | 2.27 | n/a | <0.05 |

1. Adverse results for filtrate turbidity are prescribed within Schedule 16 of O. Reg. 170/03. There are additional factors not included in the table that are necessary to determine whether a result is adverse, such as the duration of the result.
2. FCR = free chlorine residual. There is no adverse result corresponding to the treated water free chlorine residual. However, an observation of adverse water quality occurs if the residual is low enough such that water has not been disinfected in accordance with the system's *Municipal Drinking Water Licence*.
3. Free chlorine residuals are tested at various locations in the distribution system. There were no AWQIs for low chlorine residual in the distribution system.

3.4 Conventional Filtration Performance

In accordance with the system's *Municipal Drinking Water Licence*, conventional filtration facilities must meet certain performance criteria in order to claim removal credits for *Cryptosporidium* oocysts and *Giardia* cysts. In addition to continuously monitoring filtrate turbidity and other requirements, filtrate turbidity must be less than or equal to 0.3 NTU in at least 95% of the measurements each month. Table 6 summarizes filtrate turbidity compliance against the <0.3 NTU/95% performance criterion. Minimum and maximum values in the table correspond to the proportion of time that filtered water turbidity was less than or equal to 0.3 NTU in a calendar month. No AWQIs pertaining to conventional filtration performance occurred during the reporting period.

| Filter | Minimum Result | Maximum Result | Adverse Result |
|----------|----------------|----------------|----------------|
| Filter 1 | 97.2% | 100% | <95% |
| Filter 2 | 97.0% | 99.9% | <95% |
| Filter 3 | 97.8% | 100% | <95% |
| Filter 4 | 98.2% | 100% | <95% |



3.5 Nitrate & Nitrite

Treated water is tested for nitrate and nitrite concentrations on a quarterly basis in accordance with Schedule 13 (Chemical sampling and testing) of O. Reg. 170/03. Nitrate and nitrite results are provided in Table 7. All results were below the Ontario Drinking Water Quality Standards.

| Sample Date | Nitrate | | Nitrite | |
|-------------|---------------|--------------|---------------|--------------|
| | Result (mg/L) | ODWQS (mg/L) | Result (mg/L) | ODWQS (mg/L) |
| 12-Feb-2025 | 0.047 | 10 | <0.010 | 1 |
| 13-May-2025 | <0.020 | | <0.010 | |
| 18-Aug-2025 | <0.020 | | <0.010 | |
| 18-Nov-2025 | <0.020 | | <0.010 | |

3.6 Trihalomethanes & Haloacetic Acids

Trihalomethanes (THMs) and haloacetic acids (HAAs) are sampled on a quarterly basis from a distribution system location that is likely to have an elevated potential for their formation, in accordance with Schedule 13 (Chemical sampling and testing) of O. Reg. 170/03. Total THM and HAA results are provided in Table 8 and Table 9, respectively. Compliance with the provincial standards for trihalomethane and haloacetic acid concentrations is determined by calculating a *running annual average*(RAA) each quarter. The 2025 running annual averages for THMs and HAAs were below the respective Ontario Drinking Water Quality Standards.

| Sample Date | Result (µg/L) | Quarterly Average (µg/L) |
|------------------------------------------|---------------|--------------------------|
| 11-Feb-2025 | 45.6 | 45.6 |
| ¹ Q1 Regulatory Average (RAA) | | 75.9 |
| 13-May-25 | 64.2 | 64.2 |
| Q2 Regulatory Average (RAA) | | 72.7 |
| 18-Aug-25 | 129 | 129 |
| Q3 Regulatory Average (RAA) | | 76.4 |
| 18-Nov-25 | 63.6 | 63.6 |
| Q4 Regulatory Average (RAA) | | 75.6 |
| ODWQS Limit (RAA) | | 100 |

| Table 9: Total HAA results | | |
|-----------------------------|---------------|---------------------------------|
| Sample Date | Result (µg/L) | Quarterly Average Result (µg/L) |
| 11-Feb-2025 | 49.6 | 49.6 |
| Q1 Regulatory Average (RAA) | | 70.6 |
| 13-May-2025 | 58.6 | 58.6 |
| Q2 Regulatory Average (RAA) | | 62.7 |
| 18-Aug-2025 | 70.8 | 70.8 |
| Q3 Regulatory Average (RAA) | | 62.0 |
| 18-Nov-25 | 54.8 | 54.8 |
| Q4 Regulatory Average (RAA) | | 58.5 |
| ODWQS (RAA) | | 80 |



3.7 Lead Sampling

In accordance with Schedule 15.1 (Lead) of O. Reg. 170/03 and based upon favourable community lead sampling results following the Winter 2022-3 sample period, the Atikokan Drinking Water System qualified for the reduced sampling schedule with plumbing exemptions. Two (2) distribution system samples must now be collected and analyzed for pH and alkalinity during the two lead sampling periods. Additionally, these distribution system samples must be analyzed for lead in every third 12-month period after the plumbing sample exemption was activated. Table 10 summarizes the most recent results of community lead sampling conducted in 2025.

| Sample Date | Hydrant ID Number | Lead ¹ (µg/L) | pH | Alkalinity (mg/L) |
|-------------|-------------------|-----------------------------------------|------|-------------------|
| 2-Apr-2024 | 18-01-A | lead analyses not required ² | 7.24 | 37.8 |
| 2-Apr-2024 | 9-08-A | | 7.26 | 38.7 |
| 3-Sep-2024 | 13-05-B | | 6.80 | 23.4 |
| 3-Sep-2024 | 18-01-A | | 6.82 | 22.7 |
| 14-Apr-2025 | 13-05-B | | 7.07 | 40.4 |
| 14-Apr-2025 | 18-01-A | | 7.10 | 41.4 |
| 30-Sep-2025 | 18-01-A | <1.0 | 7.43 | 48.1 |
| 30-Sep-2025 | 9-01-B | <1.0 | 7.55 | 47.2 |

1. The Ontario Drinking Water Quality Standard for lead in drinking-water is 10 µg/L.
2. Distribution samples were last collected and tested for lead during Summer 2025 sampling period and will begin again in Winter 2025-26 sampling period.

3.8 Inorganic & Organic Parameters

Most inorganic parameters are sampled on an annual basis in treated water in accordance with Schedules 13 (Chemical sampling and testing) and 23 (Inorganic parameters) of O. Reg. 170/03. Sodium is sampled every five (5) years in treated water in accordance with Schedules 13 and 23 of O. Reg. 170/03. Although grab samples may be analyzed, regulatory testing for fluoride is achieved using continuous monitoring equipment in accordance with Schedule 6 of O. Reg. 170/03. The most recent inorganic parameter sampling results are provided in Table 11. All results were below the associated Ontario Drinking Water Quality Standards.

Table 11: Inorganic parameter sampling results

| Parameter | Most Recent Sample Date | Units | Result | ODWQS |
|-----------|-------------------------|-------|--------|-------|
| Antimony | 18-Aug-2025 | µg/L | <0.60 | 6 |
| Arsenic | 18-Aug-2025 | µg/L | <1.0 | 10 |
| Barium | 18-Aug-2025 | µg/L | <10 | 1000 |
| Boron | 18-Aug-2025 | µg/L | <50 | 5000 |
| Cadmium | 18-Aug-2025 | µg/L | <0.10 | 5 |
| Chromium | 18-Aug-2025 | µg/L | <1.0 | 50 |
| Fluoride | 8-Sep-2022 | mg/L | 0.721 | 1.5 |
| Mercury | 18-Aug-2025 | µg/L | <0.10 | 1 |
| Selenium | 18-Aug-2025 | µg/L | <1.0 | 50 |
| Sodium | 8-Sep-2022 | mg/L | 15 | 20 |
| Uranium | 18-Aug-2025 | µg/L | <2.0 | 20 |

Organic parameters are sampled on an annual basis in treated water in accordance with Schedules 13 (Chemical sampling and testing) and 24 (Organic parameters) of O. Reg. 170/03. These parameters include various organic acids, pesticides, herbicides, PCBs, volatile organics, and other chemicals. Sampling for all organic parameters was conducted on August 18, 2025, and results are provided in Table 12. All results were below the associated Ontario Drinking Water Quality Standards.

Table 12: Organic parameter sampling results

| Parameter | Result (µg/L) | ODWQS (µg/L) | Parameter | Result (µg/L) | ODWQS (µg/L) |
|------------------------|---------------|--------------|---------------------------|---------------|--------------|
| Alachlor | <0.050 | 5 | Diuron | <0.050 | 150 |
| Atrazine & Metabolites | <0.14 | 5 | Glyphosate | <1.0 | 280 |
| Azinphos-methyl | <0.10 | 20 | Malathion | <0.025 | 190 |
| Benzene | <0.50 | 1 | MCPA | <0.000050 | 100 |
| Benzo(a)pyrene | <0.0050 | 0.01 | Metolachlor | <0.025 | 50 |
| Bromoxynil | <0.050 | 5 | Metribuzin | <0.10 | 80 |
| Carbaryl | <0.050 | 90 | Monochlorobenzene | <0.50 | 80 |
| Carbofuran | <0.025 | 90 | Paraquat | <1.0 | 10 |
| Carbon Tetrachloride | <0.20 | 2 | Pentachlorophenol | <0.50 | 60 |
| Chlorpyrifos | <0.10 | 90 | Phorate | <0.25 | 2 |
| Diazinon | <0.025 | 20 | Picloram | <0.10 | 190 |
| Dicamba | <0.10 | 120 | Total PCBs | <0.030 | 3 |
| 1,2-Dichlorobenzene | <0.50 | 200 | Prometryn | <0.025 | 1 |
| 1,4-Dichlorobenzene | <0.50 | 5 | Simazine | <0.10 | 10 |
| 1,2-Dichloroethane | <0.50 | 5 | Terbufos | <0.50 | 1 |
| 1,1-Dichloroethylene | <0.50 | 14 | Tetrachloroethylene | <0.50 | 10 |
| Dichloromethane | <1.0 | 50 | 2,3,4,6-Tetrachlorophenol | <0.50 | 100 |
| 2,4-Dichlorophenol | <0.20 | 900 | Triallate | <0.10 | 230 |
| 2,4-D | <0.050 | 100 | Trichloroethylene | <0.50 | 5 |
| Diclofop-methyl | <0.10 | 9 | 2,4,6-Trichlorophenol | <0.20 | 5 |
| Dimethoate | <20.0 | 20 | Trifluralin | <0.10 | 45 |
| Diquat | <1.0 | 70 | Vinyl Chloride | <0.20 | 1 |

3.9 Environmental Discharge Sampling

The *Municipal Drinking Water Licence* for the Atikokan Drinking Water System requires additional sampling associated with discharges to the natural environment. During normal water treatment plant operation, process wastewater is transferred directly to the wastewater collection (sanitary sewer) system. If conditioned process wastewater is discharged to the natural environment, as may be the case during the management of a treatment process upset, composite samples must be collected and analyzed for total suspended solids (TSS). The *Licence* also requires that the effluent discharged to the natural environment has an annual average TSS concentration below 25 mg/L. In 2025, there were zero (0) discharge events.

3.10 Harmful Algal Bloom Monitoring

Starting in 2022 a requirement was added to the Municipal Drinking Water License to monitor for Harmful Algae Blooms. If a bloom is identified or suspected, then microcystin testing must be undertaken. According to the HAB plan sampling must continue for three (3) weeks of no microcystin identified. There were zero (0) reported or suspected blooms during the standard monitoring period in 2025. No microcystin sampling was required.

There were also no suspected or occurring HABs outside the standard period of June 1 to October 31. Table 13 provides a summary of suspected or occurring HABs in Atikokan since monitoring began.

| Year | Suspected | Harmful Algal Blooms |
|------|-----------|----------------------|
| | 2022 | 0 |
| 2023 | 0 | 0 |
| 2024 | 0 | 0 |
| 2025 | 0 | 0 |

4 Water Production

4.1 Overview

In accordance with Schedule 22 (Summary Reports for Municipalities) of O. Reg. 170/03, this Annual Report must include certain information for the purpose of enabling the Owner to assess the capability of the system to meet existing and planned uses. Specifically, this Report must include a summary of the quantities and flow rates of the water supplied during the reporting period, including monthly average and maximum daily flows. The Report must also include a comparison of flow monitoring results to the rated capacity and flow rates approved in the system's *Municipal Drinking Water Licence*.

4.2 Flow Monitoring Results

Throughout the reporting period the Atikokan DWS operated within its rated capacity and supplied a total of 653,110 m³ of treated water. On an average day in 2025, 1,663 m³ of treated water was supplied to the community, which represents 31% of the rated capacity of the Atikokan Water Treatment Plant (6,048 m³/day). The maximum daily flow in 2025 was 2,069 m³/day, which represents 34% of the rated capacity of the treatment facility. Flow monitoring results are summarized in Figure 1 and Table 14.

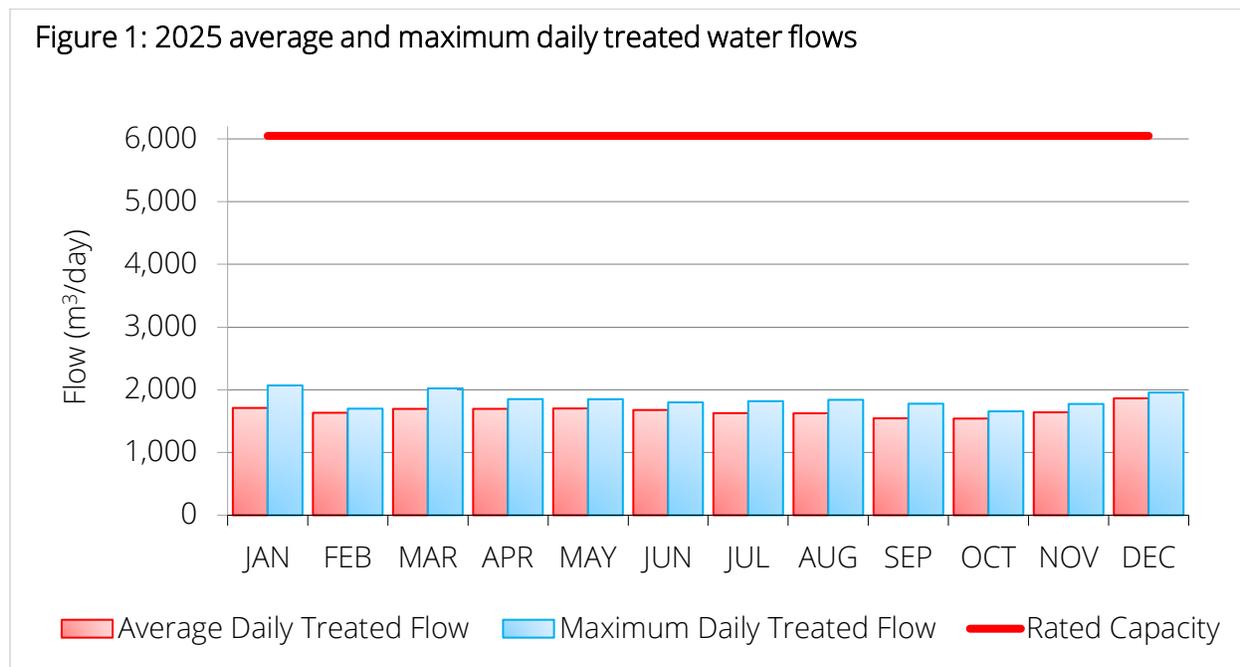


Table 14: 2025 water production summary

| Month | Total Volumes (m ³) | | Daily Flows (m ³ /day) | | Capacity Assessments ¹ | |
|---------|---------------------------------|---------------|-----------------------------------|-------------------|-----------------------------------|-------------------|
| | Raw Water | Treated Water | Average - Treated | Maximum - Treated | Average - Treated | Maximum - Treated |
| Jan | 65,420 | 53,024 | 1,710 | 2,069 | 28% | 34% |
| Feb | 56,120 | 45,736 | 1,633 | 1,699 | 27% | 28% |
| Mar | 63,410 | 52,558 | 1,695 | 2,022 | 28% | 33% |
| Apr | 57,930 | 50,881 | 1,696 | 1,851 | 28% | 31% |
| May | 61,270 | 52,763 | 1,702 | 1,849 | 28% | 31% |
| Jun | 60,160 | 50,334 | 1,678 | 1,799 | 28% | 30% |
| Jul | 67,500 | 45,582 | 1,628 | 1,818 | 27% | 30% |
| Aug | 66,910 | 50,369 | 1,625 | 1,840 | 27% | 30% |
| Sep | 64,140 | 46,352 | 1,545 | 1,778 | 26% | 29% |
| Oct | 66,050 | 47,773 | 1,541 | 1,656 | 25% | 27% |
| Nov | 62,600 | 49,214 | 1,640 | 1,774 | 27% | 29% |
| Dec | 67,000 | 57,773 | 1,864 | 1,956 | 31% | 32% |
| Total | 758,510 | 653,110 | --- | MAX: | --- | MAX: |
| Average | 63,209 | 54,594 | 1,663 | 2,069 | 31% | 34% |

1. Capacity assessments compare the average and maximum daily treated water flows to the 6048 m³/day rated capacity of the treatment facility.



4.3 Recent Historical Flows

Table 15 summarizes recent historical flow monitoring results for the Atikokan Drinking Water System. There were small increases in the volumes of source water withdrawn and treated water supplied in 2025 when compared to 2024, and average daily treated water flows in 2025 were similar to 2024. In addition to population factors, annual variations in average daily flows are in part attributable to the frequency and severity of distribution system leaks and to the quantities of water used to prevent lines from freezing.

| Year | Total Volumes (m ³) | | Daily Flows (m ³ /day) | | Annual % Change | |
|------|---------------------------------|---------------|-----------------------------------|-------------------|-----------------|---------------|
| | Raw Water | Treated Water | Average – Treated | Maximum – Treated | Raw Water | Treated Water |
| 2011 | 762,600 | 615,934 | 1,687 | 3,889 | -4.4% | -0.6% |
| 2012 | 747,243 | 642,622 | 1,756 | 3,082 | -2.0% | +4.3% |
| 2013 | 798,360 | 639,019 | 1,751 | 5,530 | +6.8% | -0.6% |
| 2014 | 943,794 | 789,592 | 2,163 | 3,770 | +18.2% | +23.6% |
| 2015 | 1,029,030 | 825,522 | 2,262 | 4,124 | +9.0% | +4.6% |
| 2016 | 771,350 | 656,030 | 1,792 | 3,389 | -25.0% | -20.5% |
| 2017 | 768,291 | 639,453 | 1,752 | 2,813 | -0.4% | -2.5% |
| 2018 | 927,760 | 785,846 | 2,153 | 3,464 | +20.8% | +22.9% |
| 2019 | 789,460 | 673,698 | 1,846 | 3,834 | -14.9% | -14.3% |
| 2020 | 854,630 | 728,241 | 1,990 | 3,227 | +8.3% | +8.1% |
| 2021 | 695,660 | 588,926 | 1,613 | 2,888 | -18.6% | -19.1% |
| 2022 | 710,850 | 592,321 | 1,621 | 4,214 | +2.2% | 0.6% |
| 2023 | 750,440 | 633,871 | 1,740 | 4,543 | +5.6% | +7.0% |
| 2024 | 748,150 | 603,917 | 1,655 | 3,275 | -0.3% | -4.7% |
| 2025 | 758,510 | 653,110 | 1,663 | 2,069 | +14.0% | +8.1% |

5 Compliance

5.1 Overview

Northern Waterworks Inc. and the Town of Atikokan employ an operational strategy that is committed to achieving the following goals:

- Providing a safe and reliable supply of drinking water to the community of Atikokan;
- Meeting or exceeding all applicable legislative and regulatory requirements; and,
- Maintaining and continually improving the operation and maintenance of the system.

The following sections will summarize incidents of adverse water quality and regulatory noncompliance that occurred during the reporting period. NWI is committed to employing timely and effective corrective actions to prevent the recurrence of identified incidents of adverse water quality and noncompliance.



5.2 Adverse Water Quality Incidents

In accordance with section 11 (Annual Reports) of O. Reg. 170/03, this Report must summarize any reports made to the Ministry under subsection 18(1) (Duty to report adverse test results) of *the Act* or section 16-4 (Duty to report other observations) of Schedule 16 of O. Reg. 170/03. Additionally, this Report must describe any corrective actions taken under Schedule 17 of O. Reg. 170/03 during the period covered by the report.

The four (4) adverse water quality incidents that occurred during the reporting period are summarized below.

- **AWQI 167198 (January 10, 2025)**

During a watermain repair at 221 Marks Street, high flows necessitated isolation before an air gap could be established. The Town of Atikokan issued a boil water advisory for the 200 block of Marks Street. Sample results showed no presence of bacteria, and the boil water advisory was rescinded January 17, 2025.

- **AWQI 169026 (July 16, 2025)**

A low chlorine residual on a dead-end bleeder on Front St. was investigated. This is the end of a long dead end 150mm water main that services only 3 residences. The hydrant was found to be turned off. The chlorine residual tested again and found to be 0.04 mg/L. Flow was restored and town staff made all necessary notifications as the chlorine residual was less than 0.05 mg/L. Boil Water Advisory (BWA) notices were delivered to affected residences and verbal explanation was provided for the reason for issuing a boil water notice and the significance of maintaining flow at that bleeder to ensure safe water. The BWA was rescinded after samples tested absent for E. coli and Total coliforms. The hydrant has not been tampered with since and the bleeder is operating well.

- **AWQI 164217 (July 27, 2025)**

During a severe thunderstorm and tornado warning a power outage occurred from 08:32 - 10:07. The UPS back up battery for the PLC also failed. This caused the singer valve on the high lift pump to be stuck closed, causing no water to flow to the distribution system from the WTP. A main break occurred during this time period as well, resulting in low/no pressure in the distribution system. The Operator opened the pressure relief set screw on top of the singer valve and allowed it to bleed for 5-10 minutes and the valve opened once the pressure was relieved. The break was located and throttled back at 10:55.

Notifications to the Northwestern Health Unit (NWHU) and Spills Action Centre (SAC) were made on July 27, 2025. Corrective action was performed in accordance with NWHU direction and included issuing a boil water advisory, verifying a free chlorine residual of at least 0.20mg/L once pressure was restored, and bacteriological sampling: Samples taken on 28 Jul 2025 and 29 Jul 2025 tested absent for E. coli and Total coliforms.

The watermain break at Zuke St. was repaired on 29 Jul 2025. Additional watermain flushing was conducted in the distribution system on 31 Jul 2025. The BWA remained in place until 11:17 Friday, August 1 because a failure of the treated chlorine analyzer at the point of entry to the distribution system on 30 Jul 2025 which required bench testing of chlorine residuals until the analyzer function could be restored and calibration verified. The Notice of Issue Resolution was submitted to the Ministry on August 1, 2025.

- **AWQI 169827 (September 10, 2025)**

Continuous monitoring equipment at the Atikokan WTP indicated a fluoride level exceeding 1.50 mg/L. Operator bench-testing returned a result of 1.53 mg/L. Fluoride dosing was stopped. A chemical pump was taken completely out of service until repairs could be made. Samples were collected and fluoride testing done both at the entry point to the distribution system and at selected locations within the distribution system. No measurement taken from an end-user was measured over the limit of 1.50 mg/L F. Water from the reservoir was directed into the sewer collection system to purge adverse water from the system. As of 17:00 Sept 10, test results from the entry point to the DWS as well as continuous monitoring equipment show levels well below the maximum and continuing to fall rapidly towards the target range.

5.3 Regulatory Compliance

In accordance with Schedule 22 (Summary Reports for Municipalities) of O. Reg. 170/03, this Report must list any requirements of the *Act*, the regulations, the system's approval, drinking water works permit, municipal drinking water licence, and any orders applicable to the system that were not met at any time during the period covered by the report. Additionally, this Report must specify the duration of the failure and the measures that were taken to correct the failure.

The most recent inspection by Ontario's Ministry of the Environment, Conservation and Parks was initiated on September 2, 2025. The final inspection rating was 98.37% and one (1) incident of regulatory noncompliance was identified. Information concerning the duration of failures and the measures taken to address those failures is provided below.

Noncompliance item no. 1

Inorganic parameter sampling requirements prescribed by Schedule 13-2 of O. Reg. 170/03 were not met. Treated water samples must be tested at least once every 12 months (*plus or minus 30 days* from the first anniversary of the previous sampling date) for inorganic parameters listed in Schedule 23 of O. Reg. 170/03. This sampling was conducted on April 30, 2024, then again on August 18, 2025. This sampling frequency is outside of the requirements prescribed in O. Reg 170/03. These events did not result in a concern with the safety of the drinking water.

NWI planned to shift this sampling to August when other annual sampling occurs. Samples were scheduled for May and August but were missed in May. The system was in a staffing shortage beginning in May 2025. NWI will ensure that in 2026 annual Schedule 13-2 sampling is conducted within the appropriate times as prescribed in O. Reg 170/03.